Soils

Basic Soil Survey: Field and Lab (SOIL 846)

Overview

This course equips the new soil scientists with concepts and techniques to carry out field soil surveys in accordance with NRCS policy and technical guidelines. Geomorphic and stratigraphic principles are applied to help define soil-landscape relationships. Soils are examined and described in contexts of (1) transects to verify map unit composition, (2) typifying pedons and (3) sampling for laboratory analyses. Descriptions and lab data are used to classify soils according to the Keys to Soil Taxonomy. Soil interpretations are discussed. Participants send a sample and description to the laboratory prior to the course; during the course participants review their data and run field kit analyses for comparison with laboratory data.

Objectives

Upon completion of this training, participants will be able to:

1. apply geomorphic and stratigraphic principles to delineate soils on the landscape.
2. describe soils in conformity with NRCS guidelines.
3. use field descriptions and laboratory data to classify soils according to the Keys to Soil Taxonomy.
4. gather transect data to verify map unit composition.
5. select pedons to be typifying pedons for the series in the area or to sample for characterization and analysis.

Prerequisites

Basic knowledge of Soil Taxonomy

Duration

2 weeks

Eligibility

Soil Scientists with less than two years of field experience may attend.

Soils

Soil Correlation (SOIL 856)

Overview

This course covers present practices and philosophy in soil classification and correlation. It includes lectures, discussions, and problem solving.

Objectives

Upon completion of this training, participants will be able to:

1. apply soil taxonomy in soil classification and correlation.
2. apply the procedures and conventions for designing, naming, and describing map unit.
3. identify the documentation needed for soil correlation.
4. apply guidelines for soil survey interpretation.

Prerequisites

Minimum of 3 years of soil survey field mapping experience and a good background knowledge of:

1. soil taxonomy
2. guidelines for soil correlation (National Soils Handbook, Soil Survey Manual)
3. guidelines for interpreting soils (National Soils Handbook)

Duration

1 week

Eligibility

Experienced soil scientists: (1) who have not had similar soil correlation training, and (2) who have attended similar sessions, but not in recent years may attend. Generally, soil survey party leaders at the GS-9 to GS-11 levels

Soils

Soil Technology - Measurement and Data Evaluation (Soil 956)

Overview

This training will provide soil scientists with skills needed to use new technology in data collection and to accurately assess the data collected for the purpose of populating the National Soil Information System (NASIS). They Will learn what information goes into the models and how it is used.

Objectives

Upon completion of this training, participants will be able to:

1. describe the tools and procedures used for collecting quality data and how to determine what data is high enough quality to put in the database.
2. use new technology in data collection and assess the adequacy of data collected for the purpose of populating NASIS.
3. explain what information is needed by the NASIS models, and how it is used within the models.

Prerequisites

Basic Soil Survey - Field and Lab

Duration

1 week

Eligibility

State office and Area/Resource Soil Scientist and Soil Survey Project Leaders, GS-09, 11, 12, and 13

Soils

Soil Technology - Programs and Application (Soil 960)

Overview

This training will provide soil scientists with skills needed to furnish and explain the correct soil information to other disciplines and land use decision makers for water quality, soil quality, hydric soils, ecosystem-based assistance, Food Security Act, and other activities of the 1990's.

Objectives

Upon completion of this training, participants will be able to:

1. adequately explain to other NRCS disciplines and land use decision makers the interrelationship of soil properties to soil behavior.
2. Furnish and explain correct soils information to other disciplines for water quality, soil quality hydric soils and other new priorities.
3. Apply both present and new soil data elements and explain which soil data elements are needed for the soil survey database.
4. explain the interrelationship of soil chemical and physical properties, site features, and climate to their application into computer models and other applications.
5. explain field soil measurement application and limitations when used in computer models.

Prerequisites

Soil Technology - Measurement and Data Evaluation

Duration

1 Week

Eligibility

State Office and Area/Resource Soil Scientists, GS-09 through GS-13

Soils

Soil Properties and Interpretations Module 1- Introduction

Objectives

Upon completion of this module, participants will be able to:

1. list the objectives of the course.
2. state the approximate length of the course.
3. state who may enroll in the course.
4. state the course presentation method.
5. state, briefly, the contents of the course.

Duration

10 minutes

Eligibility

Soil scientists at the GS-7 through GS-11 levels and selected conservationists will benefit from this training.

Method of Completion

Study Guide

Soils

Soil Properties and Interpretations Module 2- Texture

Overview

This module defines texture and describes its influence in land use including those in the rating guides, cropland, forestland, and rangeland. It describes the relationship of texture to diagnostic criteria in Soil Taxonomy.

Objectives

Upon completion of this module, participants will be able to:

1. estimate soil texture using applied knowledge, observations, available data and appropriate technical material.
2. list those land uses in which texture is a factor using applied knowledge, and explain why texture is a factor.
3. relate texture to soil taxa to make interpretations.

Duration

3 hours

Eligibility

Soil scientists at the GS-7 through GS-11 levels and selected conservationists will benefit from this training.

Method of Completion

This self-paced, leader-led training package uses audio-visual presentation and a study guide.

Soils

Soil Properties and Interpretations Module 3 - Organic Matter

Overview

This module defines organic matter and describes its influence in land use including those in rating guides, cropland, forestland, and rangeland. It describes the relationship of organic matter to diagnostic criteria in soil taxonomy.

Objectives

Upon completion of this module, participants will be able to:

1. estimate soil organic matter using applied knowledge, observations, available data and appropriate technical material.
2. list those land uses in which organic matter is a factor using applied knowledge, and explain why organic matter is a factor.
3. relate organic matter to soil taxa to make interpretations.

Duration

1 hour

Eligibility

Soil scientists at the GS-7 through GS-11 levels and selected conservationists will benefit from this training.

Method of Completion

This self-paced, leader-led training package uses audio-visual presentation and a study guide.

Soils

Soil Properties and Interpretations Module 6- Structure

Overview

This module defines structure and describes its influence in land use including those in the rating guides, cropland, forestland, and rangeland. It describes the relationship of structure to diagnostic criteria in Soil Taxonomy.

Objectives

Upon completion of this module, participants will be able to

1. estimate soil structure using applied knowledge, observations, available data and appropriate technical material.
2. list those land uses in which structure is a factor using applied knowledge, and explain why structure is a factor.
3. relate structure to soil taxa to make interpretations.

Duration

1 hour

Eligibility

Soil scientists at the GS-7 through GS-11 levels and selected conservationists will benefit from this training.

Method of Completion

This self-paced, leader-led training package uses audio-visual presentation and a study guide.

Soil Properties and Interpretations Module 9 - Permeability

Overview

This module defines permeability and describes its influence in land use including those in the rating guides, cropland, forestland, and rangeland. It describes the relationship of permeability to diagnostic criteria in soil taxonomy.

Objectives

Upon completion of this module, participants will be able to:

1. estimate permeability using applied knowledge, observations, available data and appropriate technical material.
2. list those land uses in which permeability is a factor using applied knowledge, and explain why permeability is a factor.
3. relate permeability to soil taxa to make interpretations.

Duration

2 hours

Eligibility

Soil scientists at the GS-7 through GS-11 levels and selected conservationists will benefit from this training.

Method of Completion

This self-paced, leader-led training package uses audio-visual presentation and a study guide.

Soils

Soil Properties and Interpretations Module 16 - Slope

Overview

This module defines slope and describes its influence in land use including those in the rating guides, cropland, forestland, and rangeland. It describes the relationship of slope to diagnostic criteria in soil taxonomy.

Objectives

Upon completion of this module, participants will be able to:

1. estimate soil slope using applied knowledge, observations, available data and appropriate technical material.
2. list those land uses in which slope is a factor using applied knowledge, and explain why slope is a factor.
3. relate slope to soil taxa to make interpretations.

Duration

1 hour

Eligibility

Soil scientists at the GS-7 through GS-11 levels and selected conservationists will benefit from this training.

Method of Completion

This self-paced, leader-led training package uses audio-visual presentation and a study guide.

Soils

Soil Properties and Interpretations Module 18 - Soil Temperature

Overview

This module defines soil temperature and describe its influence in land use including those in the rating guides, cropland, forestland, and rangeland. It describes the relationship of soil temperature to soil taxonomy.

Objectives

Upon completion of this module, participants will be able to

1. estimate soil temperature using applied knowledge, observations, available data and appropriate technical material.
2. list those land uses in which soil temperature is a factor using applied knowledge, and explain why soil temperature is a factor.
3. relate soil temperature to soil taxa to make interpretations.

Duration

1 hour

Eligibility

Soil scientists at the GS-7 through GS-11 levels and selected conservationists will benefit from this training.

Method of Completion

This self-paced, leader-led training package uses audio-visual presentation and a study guide.